

CHEMICALS, THE ENVIRONMENT, AND YOU

Virginia Life Science Standards of Learning

Lesson	Standard	Description
2, 3, 4	LS.1.a	Plan and conduct investigations in which data are organized into tables showing repeated trials and means.
2, 3, 4	LS.1.b	Plan and conduct investigations in which variables are defined.
2, 3, 4	LS.1.c	Plan and conduct investigations in which metric units (SI—International System of Units) are used.
2, 3, 4, 6	LS.1.d	Plan and conduct investigations in which models are constructed to illustrate and explain phenomena.
2, 3, 4	LS.1.e	Plan and conduct investigations in which sources of experimental error are identified.
2, 3, 4	LS.1.f	Plan and conduct investigations in which dependent variables, independent variables, and constants are identified.
2, 3, 4	LS.1.g	Plan and conduct investigations in which variables are controlled to test hypotheses, and trials are repeated.
2, 3	LS.1.h	Plan and conduct investigations in which continuous line graphs are constructed, interpreted, and used to make predictions.
2, 3, 4	LS.1.i	Plan and conduct investigations in which interpretations from a set of data are evaluated and defended.
2, 3, 4, 5, 6	LS.1.j	Plan and conduct investigations in which an understanding of the nature of science is developed and reinforced.
2, 3, 4, 5	LS.4.c	Investigate and understand that the basic needs of organisms must be met in order to carry out life processes including factors that influence life processes.
5, 6	LS.12.e	Investigate and understand the relationships between ecosystem dynamics and human activity including environmental issues (water supply, air quality, energy production, and waste management).

Virginia Physical Science Standards of Learning

2, 3, 4	PS.1.a	Plan and conduct investigations in which chemicals and equipment are used safely.
2, 3, 4	PS.1.b	Plan and conduct investigations in which length, mass, volume, density, temperature, weight, and force are accurately measured and reported using metric units (SI—International System of Units).
4	PS.1.c	Plan and conduct investigations in which conversions are made among metric units, applying appropriate prefixes.
2, 3, 4	PS.1.f	Plan and conduct investigations in which research skills are utilized using a variety of resources.
2, 3, 4	PS.1.g	Plan and conduct investigations in which independent and dependent variables, constants, controls, and repeated trials are identified.

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2, 3, 4	PS.1.k	Plan and conduct investigations in valid conclusions are made after analyzing data.
2, 3, 4, 6	PS.1.l	Plan and conduct investigations in which research methods are used to investigate practical problems and questions.
2, 3, 4, 6	PS.1.m	Plan and conduct investigations in which experimental results are presented in appropriate written form.
1	PS.2.b	Investigate and understand the basic nature of matter including elements, compounds, mixtures, acids, bases, and salts.

Virginia English Standards of Learning – Grades 7 & 8

Lesson	Standard	Description
2, 3, 4	7.4	Read to determine the meanings and pronunciations of unfamiliar words and phrases.
All lessons	7.5.e	Draw conclusions based on explicit and implied information.
2, 3, 4, 6	7.6	Read and demonstrate comprehension of a variety of informational texts.
All lessons	7.7.c	Synthesize information from multiple sources.
2, 3, 4, 6	7.8	Develop narrative, expository, and persuasive writing.
2, 3, 4, 6	8.4.b	Use context, structure, and connotations to determine meaning of words and phrases.
2, 3, 4, 6	8.6.e	Read and follow instructions to complete an assigned task.
2, 3, 4, 6	8.6.f	Summarize and critique text.
2, 3, 4, 6	8.6.g	Evaluate and synthesize information to apply in written and oral presentations.
All lessons	8.6.h	Draw conclusions based on explicit and implied information.
All lessons	8.6.i	Make inferences based on explicit and implied information.
2, 3, 4, 6	8.7	Write in a variety of forms, including narrative, expository, persuasive, and informational.

Virginia Mathematics Standards of Learning – Grades 7 & 8

Lesson	Standard	Description
2, 3, 4	7.4.a	Solve practical problems using rational numbers (whole numbers, fractions, decimals) and percents.
2	7.6	Use proportions to solve practical problems, which may include scale drawings, that contain rational numbers (whole numbers, fractions, and decimals) and percents.
3, 4	7.17	Collect, analyze, display, and interpret data, using a variety of graphical methods.
3, 4	7.18	Make inferences, conjectures, and predictions based on analysis of a set of data.

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3, 4	7.19	Represent, analyze, and generalize a variety of patterns, including arithmetic sequences and geometric sequences, with tables, graphs, rules, and words in order to investigate and describe functional relationships.
3, 4	8.3	Solve practical problems involving rational numbers, percents, ratios, and proportions.
3	8.12	Make comparisons, predictions, and inferences, using information displayed in frequency distributions; box-and-whisker plots; scattergrams; line, bar, circle, and picture graphs; and histograms.
3, 4	8.14.a	Describe and represent relations and functions, using tables, graphs, and rules.
3, 4	8.14.b	Relate and compare tables, graphs, and rules as different forms of representation for relationships.
Virginia Health Standards of Learning – Grades 6, 7, & 8		
Lesson	Standard	Description
1, 3, 4, 5, 6	6.1.c	Apply critical thinking skills and personal management strategies to address issues and concerns related to personal health and well-being including the effects of environmental influences on personal health.
1, 4	6.2.d	Use knowledge of the body’s structure and function to make sound decisions related to personal health including the relationship of drugs, alcohol, tobacco, and inhalants to body functioning.
1, 3, 4, 5, 6	7.3	Investigate and analyze the various factors that guide an individual’s decisions about health and well-being.
5, 6	7.4.a	Describe how family and community priorities influence an individual’s ability to reduce diseases and other health problems including the relationship of social and environmental factors to individual and community health.
4, 5, 6	7.5.b	Work cooperatively with others to support and promote healthy schools, families, and communities, including appropriate methods of expressing opinions on health issues
5, 6	8.5.a	Investigate and evaluate ways in which peers, families, and other community groups can work together to build a safe and healthy community, including methods used to reduce health hazards and risks.